

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A data transmitting system for transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a first device and a second device are connected, the data to be processed being transmitted by said first device and received by said second device,

said first device including:

an identification information obtaining system that transmits first data through the network using a first address which does not specify a destination to obtain identification information of the plurality of devices except said first device, wherein the first data is a search packet that includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the first device, and a second multicast address for receipt of a search reply,

said second device including:

an identification information transmitting system that transmits second data containing the identification information of said second device through the network using ~~a~~ the second multicast address in response to the first data transmitted by said identification information obtaining system of said first device, wherein the second data being the search reply that includes a destination address, which indicates the MAC address of the first device, a source address field, which is the identification information that indicates a MAC address of the second device;

said first device further including:

a selecting system that selects one of the second devices that transmits the identification information to said identification information obtaining system of said first device;

a join request transmitting system that transmits third data to the second device selected as the destination of the data to be processed, wherein the third data is a join request packet that includes the MAC address of the selected second device and requests the selected second device to join a multicast group such that the first device and the selected second device can communicate with each other using a specific multicast address;
and

a data transmitting system that transmits the data to be processed through the network to the selected second device using a third multicast address, which is the specific multicast address, ~~said second device being designated as a destination of the data to be processed,~~

said second device further including:

an acknowledgment transmitting system that receives the join request packet, determines whether it is possible to join the multicast group, and replies to the first device using the second multicast address with either a join success reply packet or a join unsuccessful reply packet; and

a data receiving system that is configured to receive the data to be processed transmitted from said data transmitting system of the first device using the third multicast address if the data transmitted from said data transmitting system is data having said second device as the designated destination.

2. (Original) The data transmitting system according to claim 1, wherein the first address is a first multicast address.

3-6. (Canceled)

7. (Original) The data transmitting system according to claim 2, wherein the first multicast address, the third multicast address and the second multicast address are different from each other.

8. (Original) The data transmitting system according to claim 2, wherein at least two of the first multicast address, the third multicast address and the second multicast address are equal to each other.

9. (Original) The data transmitting system according to claim 2, wherein all of devices configured to be said second device on the network receive data transmitted by using the first multicast address.

10. (Original) The data transmitting system according to claim 1, wherein part of devices configured to be said second device on the network receives data transmitted by using the third multicast address.

11. (Original) The data transmitting system according to claim 1, wherein only said first device of the devices connected to the network receives data transmitted by using the second multicast address.

12. (Original) The data transmitting system according to claim 1, further comprising an address determining system that determines the second multicast address.

13. (Currently Amended) The data transmitting system according to claim 1, wherein said data receiving system of said second device transmits ~~fourth~~^{third} data indicating an acknowledgement of receipt of the data to be processed when said data receiving system receives the data to be processed, said data receiving system transmitting the ~~fourth~~^{third} data through the network using a fourth multicast address, wherein said data transmitting system of said first device receives the ~~fourth~~^{third} data transmitted by said data receiving system of said second device.

14. (Original) The data transmitting system according to claim 13, further comprising an address determining system that determines the third multicast address and the fourth multicast address.

15. (Original) The data transmitting system according to claim 14, wherein said first device and said second device join address groups whose addresses are determined by the address determining system.

16. (Original) The data transmitting system according to claim 1, further comprising an address determining system that determines the third multicast address used for transmitting the data to be processed.

17. (Original) The data transmitting system according to claim 16, wherein said second device joins an address group whose address is determined by the address determining system.

18. (Original) The data transmitting system according to claim 16, wherein said first device includes said address determining system.

19. (Original) The data transmitting system according to claim 16, wherein said second device includes said address determining system.

20. (Original) The data transmitting system according to claim 1,
wherein said second device is a printer,
wherein the data to be processed is print data.

21. (Currently Amended) A terminal device for transmitting data to be processed through a TCP/IP-based network to which a plurality of devices are connected, comprising:
an identification information obtaining system that transmits first data through the network using a first multicast address to obtain identification information of the plurality of devices on the network, wherein the first data is a search packet that includes a destination address, which indicates the search packet as a broadcast packet, a source address, which

indicates a MAC address of the terminal device, and a second multicast address for receipt of a search reply that is second data;

a selecting system that selects one of the plurality of devices that transmits the identification information to said identification information obtaining system of said terminal device;

a join request transmitting system that transmits third data to the selected device selected as the destination of the data to be processed, wherein the third data is a join request packet that includes a MAC address of the selected device and requests the selected device to join a multicast group such that the terminal device and the selected device can communicate with each other using a specific multicast address; and

a data transmitting system that transmits the data to be processed through the network to the selected device using a ~~third~~second multicast address, which is the specific multicast address, in order that the data to be processed is received by the selected~~a requested device which is one of devices which transmit the identification information to said identification information obtaining system using a third multicast address designated by said terminal device and said requested device being designated by said terminal device as a destination of the data to be processed.~~

22. (Canceled)

23. (Currently Amended) A terminal device for receiving data to be processed through a TCP/IP-based network to which a plurality of devices are connected, comprising:

an identification information transmitting system that transmits, in response to a request including first data transmitted by a requesting device on the network using a first multicast address, second~~first~~ data containing identification information of said terminal device through the network using a second multicast address, wherein the second data being a search reply that includes a destination address, which indicates a MAC address of the

requesting device, and a source address field, which is the identification information that indicates a MAC address of the terminal device;

an acknowledgment transmitting system that receives a join request packet from the requesting device, determines whether it is possible to join a multicast group, and replies to the requesting device using the second multicast address with either a join success reply packet or a join unsuccessful reply packet; and

a data receiving system that is configured to receive the data to be processed transmitted from said requesting device using a third multicast address if the data transmitted from said requesting device is data having said terminal device as a designated destination.

24. (Currently Amended) A method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting from said requesting device a search packet through the network using a first multicast address so as to obtain identification information of the plurality of devices, wherein the search packet includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

receiving at the requesting device second data that includes the identification information transmitted by at least one of the plurality of devices using thea second multicast address designated by said requesting device, wherein the second data being the search reply that includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device;

selecting and designating one of devices whose identification information has been received as a destination device;

sending third data to the destination device selected as the destination of the data to be processed, wherein the third data is a join request packet that includes the MAC address of the destination device and requests the destination device to join a multicast group such that the requesting device and the destination device can communicate with each other using a specific multicast address; and

transmitting from the requesting device the identification information of the selected destination device and the data to be processed through the network to the destination device using a third multicast address, which is the specific multicast address.

25. (Currently Amended) A method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting from said requesting device a search packet through the network using a first multicast address so as to obtain identification information of the plurality of devices, wherein the search packet includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

receiving at the requesting device the identification information in the search reply transmitted by at least one of the plurality of devices using thea second multicast address designated by said requesting device, wherein the search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device;

selecting and designating one of devices whose identification information has been received as a destination device;

sending communication data to the destination device selected as the destination of the data to be processed, wherein the communication data is a join request packet that includes the MAC address of the destination device and requests the destination device to join a multicast group such that the requesting device and the destination device can communicate with each other using a specific multicast address;

transmitting from the requesting device the identification information of the selected destination device and the data to be processed to the destination device through the network using a third multicast address, which is the specific multicast address;

receiving an acknowledgement of receipt of the data to be processed transmitted by said ~~destination~~requested device using a fourth multicast address; and

repeating the step of transmitting identification information and data to be processed and the step of receiving the acknowledgement of receipt until the data to be processed is completely transmitted.

26. (Currently Amended) A method of receiving data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

receiving from the requesting device a search packet which is transmitted through the network using a first multicast address, wherein the search packet includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

transmitting identification information in the search reply through the network using thea second multicast address designated by said requesting device, wherein the search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device; and

receiving from the requesting device the identification information of said requested device and the data to be processed which are transmitted through the network using a third multicast address, if the data transmitted from said requesting device is data having said requested device as a designated destination.

27. (Currently Amended) A method of receiving data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

receiving a search packet which is transmitted by said requesting device through the network using a first multicast address, wherein the search packet includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

transmitting identification information in the search reply through the network using thea second multicast address, wherein the search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device;

receiving the identification information of said requested device and the data to be processed which are transmitted by said requesting device through the network using a

third multicast address designated by said requested device, if the data transmitted from said requesting device is data having said requested device as a designated destination;

transmitting an acknowledgement of receipt of the data to be processed using a ~~fourth~~^{fourth} multicast address when the data to be processed is received; and

repeating the step of receiving the identification information and data to be processed and the step of transmitting the acknowledgement of receipt step until the data to be processed is completely received.

28. (Currently Amended) A method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting a request for obtaining identification information of the plurality of devices except said requesting device from the requesting device through the network using a first address which does not specify a destination, wherein the request is a search packet that includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

receiving the request at the requested device;

transmitting the identification information in the search reply from the requested device through the network using the a second multicast address designated by said requesting device in reply to the request, wherein the search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device;

transmitting from the requesting device the identification information of the requested device and the data to be processed through the network using a third multicast address, said requested device being designated as a destination of the data to be processed; and

receiving the identification information and the data to be processed at the requested device, if the data transmitted from said requesting device is data having said requested device as a designated destination.

29. (Currently Amended) A machine-readable medium storing a computer program executable on a data processing device and usable to transmit data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the program comprising instructions for:

transmitting from said requesting device a search packet through the network using a first multicast address so as to obtain identification information of the plurality of devices, wherein the search packet includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

receiving at the requesting device the identification information in the search reply transmitted by at least one of the plurality of devices using thea second multicast address designated by said requesting device, wherein the search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device;

selecting and designating one of devices whose identification information has been received as a destination device; and

transmitting from the requesting device the identification information of the selected destination device and the data to be processed through the network using a third multicast address.

30. (Currently Amended) A machine-readable medium storing a computer program executable on a data processing device and usable to receive data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the program comprising instructions for:

receiving from the requesting device a search packet which is transmitted through the network using a first multicast address, wherein the search packet includes a destination address, which indicates the search packet as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

transmitting identification information in the search reply through the network using thea second multicast address designated by said requesting device, wherein the search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device; and

receiving from the requesting device the identification information of said requested device and the data to be processed which are transmitted through the network using a third multicast address, if the data transmitted from said requesting device is data having said requested device as a designated destination.

31. (Currently Amended) A machine-readable medium storing a computer program executable on a data processing device and usable to transmit data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the program comprising instructions for:

transmitting a request for obtaining identification information of the plurality of devices except said requesting device from the requesting device through the network using a first address which does not specify a destination, wherein the request includes a destination address, which indicates the request as a broadcast packet, a source address, which indicates a MAC address of the requesting device, and a second multicast address for receipt of a search reply;

receiving the request at the requested device;

transmitting the identification information in a search reply from the requested device through the network using thea second multicast address designated by said requesting device in reply to the request, wherein search reply includes a destination address, which indicates the MAC address of the requesting device, and a source address field, which is the identification information that indicates a MAC address of the requested device;

transmitting from the requesting device the identification information of the requested device and the data to be processed through the network using a third multicast address, said requested device being designated as a destination of the data to be processed; and

receiving the identification information and the data to be processed at the requested device, if the data transmitted from said requesting device is data having said requested device as a designated destination.

32-33. (Canceled)